

# SKYNEWS



Horsehead Nebulae  
in H $\alpha$  combined with Color

Guy Walton

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**OCTOBER  
MEETING NOTICE**

October 13th  
University of Victoria  
Elliott Bldg.  
Room 060 7:30pm

[www.victoria.rasc.ca](http://www.victoria.rasc.ca)

## Cover Astrophotograph

by Guy Walton

### Horse-head Nebulae in H $\alpha$

This image was created using my H $\alpha$  image of February 17, 2010 as a luminance layer and my color image of January 20, 2008 for the RGB layers. I used ImagesPlus 3.50a to align, scale, rotate, split LRGB and combine the Luminance (H $\alpha$ ) and RGB channels. Photoshop and Noise Ninja were used to finish the image.

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## October Meeting

### Members Night

#### Light Pollution Initiatives

Mark Bohlman, David Lee, Sid Sidhu

#### Observing programs: Beginners to Challenge Level

Nelson Walker

#### Green Laser Pointers: An Astronomer's New Dilemma - with discussion.

Sherry Butnor

Please note: Coffee and conversation will still be held after the meeting in the fourth floor lounge. However, there is no elevator at present so you need to be able to climb three flights of stairs. We will have to leave the lecture room by the back entrance, travel around the building outside to the front and then go up the stairs that way. We hope that the construction will all be complete by December.

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## President's Message

As my term as your President nears its end I am looking forward to spending more time observing the night sky. I won't stop photographing it but Nelson Walker's workshop at the star party has rekindled my latent interest in looking through an eyepiece. For me, the



great thing about observational astronomy is the ever changing sky. Jupiter, Uranus and Neptune are putting on a show in the evening sky this fall and Comet Hartley may become bright enough for naked eye observing. Also now that I can recognize quite a few constellations I like seeing changing patterns with old familiar friends emerging in the east and the current ones departing in the west as the seasons change. As I write this I am excited about seeing the southern skies. Wendy and I are joining Joe Carr on a dream trip to New Zealand leaving in two days. It will be my first visit there and I can't wait.

The Light Pollution Abatement efforts are continuing and a significant step was made with the recent survey of the local sky quality. Thanks to the fine organizing by Sid Sidhu and David Lee and the efforts of many of you who took measurements with the Sky Quality Meters (SQMs) we have an excellent start to benchmarking the sky quality in the greater Victoria region. It should serve us well in the future as we will be able to see what changes are occurring over time. Thanks to all who participated.

Don't forget to get your bookings for the Annual General Meeting that is coming up in November. I look forward to seeing you all there.

## John McDonald



Last AGM in 2009

## November AGM

**The Annual General Meeting:  
Cedar Hill Golf Course  
Nov 13th 6pm - 9:30**

Fixed three-course dinner with no-host bar. Dinner menus and schedules will be given shortly. We hope you will all come out to our new venue and share some great food and good times with our members and guests.

### Guest Speaker

*Dr. Stephanie Cote*  
Group Leader: Canadian Gemini Office, HIA

### A Decade of Discoveries with the Gemini Telescopes

The twin 8meters Gemini Telescopes have been the most powerful telescopes available to Canadian astronomers over the past 10 years. In the presentation Dr. Cote will highlight the most interesting discoveries that were made with Gemini and in particular those in which Canadian astronomers were involved. Some of the key science results will touch upon planets around other stars, supernovae, the center of our Galaxy, the formation of the first galaxies in the Early Universe, and Gamma-ray bursts.

### Observing Report

by *Bill Weir, Sept 21st*

I was able to get out to the 25" at Pearson College to enjoy some of the great seeing but had to be satisfied with earlier in the evening viewing. After an hour of a 10" house fan blasting away on the back end of the scope



while observing the Moon, (using a binocular viewer it isn't too bright) I directed the scope towards Jupiter. I was using 15mm Televue plossls in the bins. I hadn't checked ahead as to where the Galilean moons would be so was pleasantly surprised to see a tiny black dot close to the meridian at the equatorial edge of the SEB. As the view steadied I was able to then clearly see a little pearl of the moon almost superimposed on the shadow. It turned out to be Europa. Eventually the two emerged from transit within just a few minutes of each other, with Europa's exit at 2141 PDT and the shadow was no longer a visible dent in the side of the planet at 2144. I imagine the two were so close together due to Jupiter being around opposition. I don't remember ever seeing a shadow and moon so close together.

It was a wonderful evening although I don't believe the seeing was as good as last week when I was able to take the scope up to 500X + on Jupiter. This time the image was degrading as I went past 300X. I don't think though that the mirror was as cooled this time. That being said I was able to make out 7 crater-lets within Plato.

Many little subtle features were visible although there was no way I could wait for the GRS. I'll have to be satisfied with the view of it Monday evening when myself and several of the Pearson students observed it using one of their 10 inch Dobsonians. I also didn't have an encounter with any wild animals other than the usual deer the over populate our area. I did though hear from one of my sons that during the evening our little mini schnauzer treed a cougar in our yard while I was out.



*The Galilean moons. From left to right, in order of increasing distance from Jupiter: [Io](#), [Europa](#), [Ganymede](#), [Callisto](#).*

**NRC receives technology milestone recognition Today's global technology inspired by past achievement**

**September 25, 2010 – Vancouver, British Columbia**

The National Research Council Canada (NRC) [Dominion Radio Astrophysical Observatory](#) (DRAO) today received the IEEE Milestone in Electrical Engineering and Computing during a ceremony held at the annual DRAO Open House. The Milestone was awarded in recognition of the 1967 first successful radio astronomical observations using Very Long Baseline Interferometry or VLBI.

VLBI combines the signals of widely separated telescopes in order to form a very high resolution image. In the experiment recognized today, the separation of the telescopes was an impressive 3074 km between two NRC telescopes in Penticton, British Columbia and Algonquin Park, Ontario.

"Our government supports science and technology to create jobs and economic growth, and to improve the quality of life of Canadians, said Mr. Ron Cannan, Member of Parliament for Kelowna-Lake Country, attending the ceremony. "Canada is recognized internationally as a world leader in astronomy and astrophysics research and people all across our country can be proud of our record of achievement."

During the ceremony, two bronze plaques attached to the base of the 26-m radio telescope used during the historic experiment were unveiled.

"We are proud to be recognized by IEEE for NRC's pioneering work on

the occasion of the Dominion Radio Astrophysical Observatory 50th anniversary." said John R. McDougall, President of the National Research Council. "And, while we are proud of our past achievements, NRC continues to look toward the future with innovations on key science and technology areas for the benefit of Canadians through collaborations with universities and industry both in Canada, and around the world."

Prof. David G. Michelson, chair of IEEE Vancouver section and a member of the Department of Electrical and Computer Engineering at the University of British Columbia, said, "With the first successful demonstration of VLBI in 1967, both radio astronomy and geodesy were forever changed. Today, VLBI observations define the reference frame used by GPS navigation systems that many of us have come to depend on. It is therefore difficult to overstate the significance of this accomplishment."

IEEE Milestone designations are awarded following a careful evaluation, by the IEEE Board of Directors, of the historical significance and global uniqueness of the accomplishment.

The IEEE Milestones in Electrical Engineering and Computing program honours significant technical achievements in areas associated with IEEE. The Milestones Program was established in 1983 as part of IEEE's Centennial Celebration in 1984.

***About the National Research Council of Canada***

Recognized globally for research and innovation, Canada's National

Research Council is a leader in the development of an innovative, knowledge-based economy for Canada through science and technology. For more information, please visit [www.nrc-cnrc.gc.ca](http://www.nrc-cnrc.gc.ca).

**About IEEE**

IEEE, the world's largest technical professional association, is dedicated to advancing technology for the benefit of humanity. Through its highly cited publications, conferences, technology standards, and professional and educational activities, IEEE is the trusted voice on a wide variety of areas ranging from aerospace systems, computers and telecommunications to biomedical engineering, electric power and consumer electronics.

**National Science and Technology Week.**



Come and Celebrate with the NRC starting with a FREE movie on the Dominion Astrophysical Observatory's dome

*Friday, October 15<sup>th</sup> 2010 6:30pm  
5071 West Saanich Rd*

We will revisit our first successful movie screening by showing the 1953 version of "War of the worlds"! In "observatory fashion" the film will be moderated by Dr. James Di Francesco, who will examine the facts and fictions that underlie this Sci-Fi classic. The plan is to screen the movie outdoors by projecting it onto the dome itself! With this said, bring up your lawn chairs and plenty of warm clothing and with your friends and family relax! Should the weather cooperate member

of the Royal Astronomical Society of Canada will be on hand with telescopes to observe both the moon and Jupiter. Should the weather prove inhospitable we will adapt and screen the movie indoors

*As part of the NRC's Science and Technology*

**Café Scientifique – "Riding a Giant Telescope to the Beginning of Time"  
Dr. Luc Simard**



*Tuesday October 19th, doors open 6:30 p.m.  
Strathcona Hotel - Maple Room  
919 Douglas Street, Victoria BC*

In a Café, we pull science away from its usual habitats of the classroom and the laboratory, and into, well,... a café or bar! A Café Scientifique is more informal and accessible than a public lecture. It is for people who are genuinely interested in science, but who don't have the opportunity to discuss their views with scientists. No previous scientific knowledge is required to participate. All you need is and a willingness to listen to others, to discuss, ask questions and express opinions.



The concept of the Café Scientifique goes back to the salons of Paris, France in the 19th century where people would gather to talk informally about science. This idea disappeared, but was brought back in the 1990s by groups in the United Kingdom and France. The concept has now spread around the world, and Cafés are held in countries as diverse as Morocco, Romania, Denmark, Spain, Argentina, Cameroon, and Canada.

## Interesting IYA2009 Feedback



by Jim Hesser

Recently I was at BCAA renewing some policies. Being the first customer of the day in an otherwise empty office, there was no time pressure.

During the conversation it came out that I worked at that the Observatory, which prompted

the lady waiting on me to share an experience. She volunteered that she and her 13-year old son had enjoyed a wonderful time with a lady volunteer at a beautiful astronomy display at the Victoria Airport last year. They thought the location was perfect for people like them waiting for someone to arrive, and she couldn't say enough about how enjoyable speaking with the lady volunteer was, whose name unfortunately she couldn't recall. I bet there are a lot of people in Victoria who feel the same way as she does about the experiences they had interacting with RASC, UVic and NRC-HIA volunteers at The Bay Centre, Airport or Mayfair Mall last year during the FETTU exhibits.

solve some of the biggest mysteries of solar physics. Today's announcement means that researchers can begin building sensors for unprecedented *in situ* measurements of the solar system's innermost frontier.

"Solar Probe+ is going where no spacecraft has gone before," says Lika Guhathakurta, Solar Probe+ program scientist at NASA HQ. "For the first time, we'll be able to 'touch, taste and smell' the sun."

Last year, NASA invited top researchers around the world to submit proposals detailing possible science investigations for the pioneering spacecraft. Thirteen proposals were received and five have been selected.

For further information:  
<http://science.nasa.gov/>

## Solar Probe to Plunge Directly into Sun's Atmosphere

**Sept. 2, 2010:** NASA's daring plan to visit the sun took a giant leap forward today with the selection of five key science investigations for the Solar Probe+ spacecraft.



Slated to launch no later than 2018, the smart car-sized spacecraft will plunge directly into the atmosphere of the sun, aiming to

## NASA's EPOXI Mission for Hartley 2 Flyby



PASADENA, Calif. - Earlier today, navigators and mission controllers for NASA's EPOXI mission watched their computer screens as 23.6

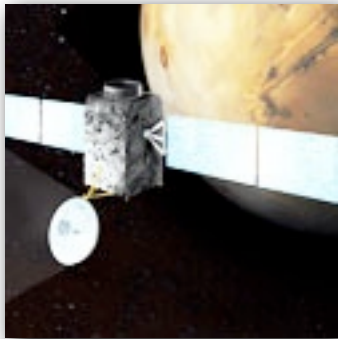
million kilometers (14.7 million miles) away, their spacecraft successfully performed its 20th trajectory correction maneuver. The maneuver refined the spacecraft's orbit, setting the stage for its flyby of comet Hartley 2 on Nov. 4. Time of closest approach to the comet was expected to be about 10: 02 a.m. EDT (7:02 a.m. PDT).

On Nov. 4, the spacecraft will fly past the comet at a distance of about 700 kilometers (435 miles). It will be only the fifth time in history that a spacecraft has been close enough to image a comet's nucleus, and the

first time in history that two comets have been imaged with the same instruments and same spatial resolution.

"We are imaging the comet every day, and Hartley 2 is proving to be a worthy target for exploration," said Mike A'Hearn, EPOXI principal investigator from the University of Maryland, College Park.

### Canadian Space Agency Contributing to 2016 Mars Mission: Joint US-Canadian instrument will search for signs of life



The Canadian Space Agency (CSA) will share leadership for a new science instrument that will probe the atmosphere of Mars in search of biological sources of methane, and

consequently, signs of life. The instrument, known as MATMOS (Mars Atmospheric Trace Molecule Occultation Spectrometer), is a partnership between the California Institute of Technology (Caltech), the CSA and NASA's Jet Propulsion Laboratory (JPL).

MATMOS has been selected by NASA and the European Space Agency for launch on board the ExoMars Trace Gas Orbiter, slated for launch in 2016. MATMOS will help scientists attempt to solve the mystery of methane on Mars by confirming seasonal distribution patterns, and providing new interpretations of the origin of the gas on Mars. Methane was discovered on Mars in 2003 in greater abundance than expected. It is a possible biomarker for signs of life, since the gas is readily produced by biological activity. "MATMOS will provide a fingerprint of the Mars atmosphere that will help unlock the

mystery of Mars methane. The key is MATMOS' very high sensitivity. It will be able to measure the distribution of methane and other trace gases in the atmosphere with altitude and season -where and when they appear will provide clues to the surface and climate processes that produce them," says Dr Victoria Hipkin, senior planetary scientist at the CSA, who will be co-Principal Investigator for MATMOS along with Dr Paul Wennberg of Caltech.

The Canadian science team includes prominent Canadian atmospheric and planetary researchers from Dalhousie University in Halifax (Dr James Drummond); the University of Toronto (Drs Jonathan Abbatt, Barbara Sherwood-Lollar, Kimberly Strong, and Kaley Walker), York University (Dr Jack McConnell) and the University of Winnipeg (Dr Ed Cloutis).

The MATMOS instrument will build on the expertise Canada has acquired from the CSA's SCISAT mission, which has been using a similar technique and technology to study ozone depletion in Earth's atmosphere since 2003. The CSA will fund the conceptual phase of the Canadian contribution to MATMOS, and has selected ABB Bomem of Quebec City as the prime contractor for the Canadian elements (the same company that built elements of SCISAT's hardware). Canada's contribution will include the heart of the instrument: the critical subsystem of a detection instrument known as an interferometer; a solar imager; and optical components that will collect light for the entire instrument.

**Source:** [Apogee CSA's Online Newsletter](#)

### Cool Astronomy Web Sites

Canadian Space Agency

[www.asc-csa.gc.ca](http://www.asc-csa.gc.ca)

NASA [www.nasa.gov](http://www.nasa.gov)

JPL <http://www.jpl.nasa.gov/>

Hubble Space Telescope

<http://hubblesite.org/>

Astronomy Picture of the Day

<http://apod.nasa.gov/apod/>

Cloudy Nights - Telescope reviews

<http://www.cloudynights.com/>

### ASTRONOMY CAFE (EACH MONDAY)



#### Fairfield Community Centre

1330 Fairfield Rd. Victoria,

7:30pm - 11pm

Call Geoff at (250) 592-2264 for directions and information.

New comers are especially encouraged.

### NEW OBSERVERS GROUP



#### Observer / CU Volunteers / Members

Email Lists: Contact Joe Carr to subscribe

[webmaster@victoria.rasc.ca](mailto:webmaster@victoria.rasc.ca)

### December Meeting

Wednesday 8th - 7:30pm - Room 060 Uvic Elliott Building

**Guest Speaker: Dr. Andrew Woodsworth**

Update on the [ALMA](#) project

The Atacama Large Millimetre / submillimeter Array of radio telescopes is currently being built in the Atacama Desert in Chile. Canada is participating in this huge project, and Dr. Woodsworth is on the ALMA advising committee, so he will have current information to share upon his return from Chile.

### RASC Victoria Council

President John McDonald <a href="mailto:President@victoria.rasc.ca">President@victoria.rasc.ca</a>	Librarian Charles Banville <a href="mailto:librarian@victoria.rasc.ca">librarian@victoria.rasc.ca</a>	New Member Liaison Bruno Quenville <a href="mailto:newmembers@victoria.rasc.ca">newmembers@victoria.rasc.ca</a>
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